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Current Situation and Solutions for Developing Secondary School Principals in the North Central Region of Vietnam From a Job Position Approach

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ABSTRACT

The principal plays a pivotal role in shaping the quality of education, especially in secondary schools where students transition from foundational to advanced knowledge. In the North Central region of Vietnam, the development of secondary school principals faces specific challenges due to socio-economic disparities, limited infrastructure, and uneven digital readiness. This paper analyzes the current situation of secondary school principals in Thanh Hoa, Nghe An, and Ha Tinh provinces, focusing on their competencies, limitations, and factors affecting their performance. Using the Job Position Approach, integrated with digital and AI competencies, the study proposes solutions for developing principals to meet the requirements of educational reform and digital transformation. Findings reveal significant gaps in digital literacy, AI application, and systematic leadership development. The paper concludes with practical recommendations for policymakers, training institutions, and school leaders.

KEYWORDS: secondary school principals, job position approach, North Central Vietnam, leadership development, digital competency, AI in education.

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1. INTRODUCTION

Education is the foundation for sustainable development and the key to national competitiveness. In Vietnam, educational reform is guided by Resolution 29-NQ/TW (2013) on comprehensive renovation of education and training, and Resolution 57-NQ/TW (2024) emphasizing digital transformation. Secondary school principals are crucial actors in this process, as they serve as administrative managers and transformative leaders responsible for shaping strategic visions, fostering pedagogical innovation, and integrating emerging technologies.

Principals of lower secondary schools not only assume administrative management functions but also must act as transformational leaders responsible for building a strategic vision, promoting pedagogical innovation, and integrating advanced technologies. Among these technologies, artificial intelligence creates significant teaching and educational management innovation opportunities. For principals of lower secondary schools, who play a central role in school governance, the practical application of artificial intelligence not only enhances the quality of teaching but also improves management efficiency, ranging from personalized learning and learning data analysis to decision-making support and the automation of administrative processes. This requires principals to develop a strategic awareness and serve as leaders of digital transformation for their schools, embedding artificial intelligence and digital transformation into medium-term and long-term development plans.

In the North Central region of Vietnam, which includes Thanh Hoa, Nghe An, and Ha Tinh provinces, secondary school principals encounter significant challenges: limited infrastructure in rural and mountainous areas, low digital readiness, and insufficient professional development aligned with digital and artificial intelligence competencies. While previous studies have addressed school leadership in general, few have examined the development of principals through the Job Position Approach that integrates digital transformation.

In this context, the development of the principal workforce should not be limited to training according to general standards; it needs to adopt a "job position-based" approach. This approach, which has been successfully implemented in Singapore through the framework of the National Institute of Education (Thiam-Seng & David, 2018) and in the United Kingdom through the National Professional Qualification for Headship (Bush, 2018), provides a potential solution by clearly defining the roles, responsibilities, and competency requirements for each leadership position. Particular emphasis is placed on competencies related to the application

of artificial intelligence in school management - such as student data analysis, learning performance prediction, dropout risk detection, and personalized learning recommendations (Wayne et al., 2019; Luckin, 2018), as well as in teaching, including lesson preparation, learning activity design, student feedback, and the integration of intelligent learning platforms. This is the foundation for constructing a scientific and transparent planning, recruitment, training, and evaluation process.

By integrating digital competencies and modern governance models such as Plan–Do–Check–Act (PDCA) and Observe–Orient–Decide–Act (OODA), the job position-based approach not only enhances leadership capacity but also aligns with national priorities for digital transformation, as stipulated in the Education Development Strategy 2021–2030 (Government of Vietnam, 2021). To ensure effective implementation, it is essential to strengthen collaboration, knowledge sharing, joint development through connections with technology centers and artificial intelligence enterprises, and participation in digital transformation projects (Williamson, 2019). Moreover, adequate infrastructure and information security must be guaranteed by establishing appropriate information technology systems and ensuring the protection of student and teacher data (Selwyn, 2022).

Although domestic studies have focused on administrative management, they have not deeply explored the job position-based approach or competencies related to artificial intelligence. While emphasizing digital leadership, international research has not yet addressed the integration of these elements within the specific context of Vietnam, particularly in the North Central Region. Therefore, this dissertation seeks to fill that gap by developing a job position-based competency framework and a combined PDCA+OODA model, emphasizing competencies and orientations for applying artificial intelligence. This aims to provide practical solutions for educational innovation.

With its geographical, economic, and cultural diversity, the North Central Region of Vietnam offers an ideal setting for research that can generate knowledge scalable to other regions. Such work contributes to building a team of lower secondary school principals who are comprehensive in competency, technologically literate, and prepared to lead in the contemporary era. Principals do not need to be technology experts; however, they must act as leaders of change with strategic vision, organizational capacity, innovative thinking, and appropriate investment of resources. This presents an opportunity for lower secondary schools, whether in advantaged or disadvantaged areas, to approach modern education and enable students to develop more comprehensively.

This paper aims to: (i) analyze the current situation of secondary school principals in the North Central region, (ii) identify challenges in leadership development, and (iii) propose solutions using the Job Position Approach framework integrated with digital and artificial intelligence competencies.

2. LITERATURE REVIEW

Various studies emphasized principals' leadership role in improving education quality. Asmendri (2018) argued that the principal is the decisive factor for the success or failure of a school in shaping students' character and must have a collaborative vision, flexibility, and the ability to create a healthy learning environment. Dowd (2020) emphasized that principals must care about students' success, combine communication skills with foresight, particularly in managing student diversity. According to Meador (2019), the role of the principal includes leadership, teacher evaluation, student discipline, and building a favorable learning environment. Chalikias et al. (2022) highlighted the role of principals in teachers' professional development, serving as lifelong learning models. Kafka (2021) described principals as educational activities, resource utilization, and school culture building managers. Kaser et al. (2020) listed 21 roles of principals, ranging from affirming achievement to community visibility.

These studies show that developing principals should focus on strategic leadership and modern governance. Still, they have not delved deeply into the context of lower secondary schools in developing countries such as Vietnam. In Vietnam, many studies have focused on analyzing the role of principals in educational innovation. For example, Pham & Tran (2019) stated that lower secondary school principals play a role in setting directions, managing curricula, and promoting educational activities. Le (2020) emphasized the role of organizing and managing educational activities. Dinh (2018) described principals as managers of a complex system who are required to implement policies flexibly. The doctoral dissertation by Nguyen (2023) on core upper secondary school administrators can be referenced. However, it mainly focuses on the upper secondary level and does not deeply address lower secondary schools in the North Central region. Domestic studies have also not integrated modern competencies such as digital transformation, artificial intelligence, and foreign languages for lower secondary school principals.

The job position approach has been widely applied in educational management. Pont et al. (2008) stressed that the job position approach is a policy priority that enhances autonomy and focuses on learning outcomes. Bal & de Jong (2021) argued that this approach helps improve leadership capacity in the context of the Fourth Industrial Revolution. Nusche & Hopkins (2019) emphasized that developing administrators through the job position approach is significant for each school and the education system. The Australian Institute for Teaching and School Leadership (2020) developed professional standards for principals, focusing on governance competencies such as strategic leadership, financial management, and community engagement. Programs such as the National Professional Qualification for Headship in the United Kingdom and the Leaders in Education Programme in Singapore have also adopted the job position approach, identifying tasks such as digital governance and international integration. In Vietnam, Dang (2017) proposed developing educational administrators using the job position approach, focusing on building competency

frameworks based on job duties. Nguyen (2023) also built a competency framework for core upper secondary school administrators, including functions and tasks such as supporting colleagues, coordinating with education authorities, and online professional development. However, these studies have not focused on lower secondary school principals and have not integrated modern governance factors such as the PDCA–OODA model, digital competencies, and artificial intelligence applications.

In digital transformation, recent international studies have highlighted the role of digital competencies and artificial intelligence in educational management. Leithwood et al. (2022) argued that principals must integrate digital competencies into the job position approach to manage online learning systems and analyze student data effectively. McKinsey (2022) emphasized that principals must use artificial intelligence to optimize student and resource management. Ng (2017) described the Leaders in Education Programme in Singapore, where principals are trained in digital governance and international integration. UNESCO (2023) also recommended training principals in artificial intelligence and big data to improve management effectiveness. Governance models such as PDCA (Deming, 1986) and OODA (Boyd, 1995) have been applied to increase flexibility and efficiency in leadership. The study by Phạm Quang Trung (2020) addressed digital transformation in educational management but mainly focused on higher education. Nguyễn Thị Thu Hằng (2024) studied digital transformation in general education but did not go deeply into the role of lower secondary school principals. Resolution No. 57-NQ/TW (2024) also emphasized the need to enhance digital and artificial intelligence competencies for educational administrators. However, there has been no specific study on lower secondary school principals in the North Central region that integrates the PDCA–OODA governance model, digital competencies, artificial intelligence, and foreign languages.

3. METHODOLOGY

3.1 Research Design

The study adopted a mixed-methods approach, combining surveys, in-depth interviews, and policy analysis. The Job Position Approach framework was applied to identify specific roles, responsibilities, and competencies required for secondary school principals.

3.2 Participants

The study involved 500 secondary schools across Thanh Hoa, Nghe An, and Ha Tinh. Surveys were conducted with 450 principals, while 30 principals, 50 teachers, and 15 educational experts participated in interviews.

3.3 Data Collection and Analysis

Quantitative data were collected via structured questionnaires, focusing on demographics, digital competencies, artificial intelligence application, and professional development. Qualitative data from interviews provided insights into challenges and proposed solutions. Data were analyzed using the Statistical Package for the Social Sciences and thematic coding.

4. FINDINGS: CURRENT SITUATION OF SECONDARY SCHOOL PRINCIPALS

4.1 Demographics and Structure

The average age of secondary school principals is 47. Most principals have over 20 years of teaching experience but limited exposure to digital technologies. Women account for 42 percent of the leadership workforce. Schools in urban centers show stronger digital readiness compared to rural and mountainous areas.

4.2 Competencies

- Professional qualities: Principals demonstrate strong commitment to educational values but show weaknesses in innovation and change management.
- Leadership capacity: Strategic planning skills are relatively strong; however, digital leadership is weak. Few principals use data-driven decision-making.
- Digital and artificial intelligence competencies: 68 percent of principals report low confidence in applying artificial intelligence tools (for example, adaptive learning platforms, automated assessment). Only 22 percent have participated in artificial intelligence-related training.

4.3 Challenges

- Infrastructure gaps: 65 percent of rural schools lack stable internet access.
- Policy gaps: No standardized competency framework integrating digital and artificial intelligence skills.
- Socio-economic disparities: Ethnic minority regions face higher dropout rates, demanding additional leadership roles from principals.

5. PROPOSED SOLUTIONS FROM A JOB POSITION APPROACH

5.1 Principles

Solutions must be goal-oriented, systematic, practical, sustainable, and innovative.

5.2 Solutions

Raising awareness and strategic vision: Elevate principals' role as digital leaders through national awareness campaigns, policy dialogues, and regular workshops. Establish professional learning communities at regional and national levels where principals can share best practices, address challenges, and co-create digital transformation strategies. This will help cultivate a collective strategic vision for technology-enhanced school leadership.

Developing competency frameworks: Revise and expand the principal competency framework to integrate digital and artificial intelligence competencies aligned with United Nations Educational, Scientific and Cultural Organization and Organisation for Economic Co-operation and Development standards. The framework should outline progressive competency levels, provide measurable indicators, and emphasize technical proficiency and ethical responsibility in digital technologies.

Reforming recruitment and appointment: Transition recruitment and promotion systems toward a Job Position Approach that prioritizes digital leadership competencies. This includes designing transparent selection criteria, incorporating scenario-based digital problem-solving assessments, and ensuring equity in opportunities for candidates from diverse regions and backgrounds.

Professional development programs: Implement personalized and modular training pathways covering artificial intelligence applications in education, digital pedagogy, and data-driven decision-making. Training should be competency-based, practice-oriented, and supported by mentoring and peer-learning networks. Partnerships with universities, ed-tech companies, and international organizations can enrich these programs with global expertise and innovative methodologies.

Evaluation and accountability: Establish a performance-based evaluation system that integrates the Plan–Do–Check–Act cycle and the Observe–Orient–Decide–Act loop. Digital indicators should be embedded to track school improvement, student outcomes, and the effective use of technology. Regular feedback loops, combined with transparent reporting mechanisms, will enhance accountability and foster a culture of continuous improvement.

Policies and incentives: Develop enabling policies that ensure equitable access to digital infrastructure, including high-speed internet and educational technology resources, especially in rural and disadvantaged areas. Provide financial support and recognition programs, such as digital leadership awards and career advancement incentives, to motivate principals. Long-term sustainability should be ensured through public–private partnerships and integration with national education reform agendas.

6. DISCUSSION

Integrating the Job Position Approach with digital and artificial intelligence competencies signifies a fundamental paradigm shift in educational leadership development. Unlike traditional models that emphasize administrative management, this integrated approach redefines the role of principals as strategic leaders equipped to harness data, technology, and human capital for sustainable school improvement. International evidence underscores that successful leadership development depends on structured competency frameworks, systematic mentoring, and data-driven decision-making processes. However, directly adopting these models in Vietnam - particularly in the North Central region - necessitates careful contextualization to local socio-economic realities. This includes addressing disparities in resource allocation, ensuring digital inclusivity, and safeguarding equity in leadership capacity-building.

Applying continuous improvement models, specifically the Plan–Do–Check–Act (PDCA) cycle and the Observe–Orient–Decide–Act (OODA) loop, provides principals with iterative mechanisms to enhance institutional performance. These frameworks encourage accountability and adaptability, enabling school leaders to respond to dynamic challenges such as demographic shifts, resource constraints, and policy reforms. Principals can cultivate a culture of innovation, resilience, and evidence-based practice by systematically embedding these cycles into school governance.

Moreover, equipping principals with artificial intelligence competencies unlocks new possibilities for proactive leadership. Predictive analytics, for example, can be applied to monitor student performance trajectories, forecast potential dropout risks, and personalize intervention strategies. In this sense, AI does not replace human judgment but augments leadership decision-making with deeper insights and foresight. Combined with the Job Position Approach, this creates a holistic leadership development model that aligns professional standards with future-oriented capabilities, bridging the gap between policy aspirations and practical realities.

Ultimately, this integration presents both an opportunity and a challenge: while it holds the potential to transform school leadership in Vietnam into a more adaptive, data-driven, and equitable system, it also requires robust investment in professional development, technological infrastructure, and supportive policy environments. Without these enabling conditions, the risk remains that digital transformation will widen, rather than close, existing gaps in educational leadership quality across regions.

Implications for Policy and Practice: Integrating the Job Position Approach with digital and artificial intelligence competencies in leadership development carries several key implications for educational policy and practice. First, policymakers need to establish a national competency framework for school principals that explicitly incorporates digital literacy and artificial intelligence skills alongside traditional leadership domains. Such a framework would provide consistency in expectations and serve as a foundation for recruitment, professional development, and performance evaluation.

Second, professional development programs must move beyond generic workshops toward sustained, practice-based learning models. This includes mentoring, peer learning networks, and scenario-based training that reflect the complexities principals encounter in diverse socio-economic contexts. In regions such as North Central Vietnam, capacity-building initiatives should be tailored to local realities, ensuring that schools with limited resources are not left behind in the digital transformation.

Third, investments in technological infrastructure and data management systems are critical. Without reliable access to digital platforms, data analytics tools, and secure information systems, the potential of artificial intelligence in supporting school leadership will remain underutilized. Policymakers should prioritise equitable resource distribution, ensuring that rural and under-resourced schools can participate meaningfully in innovation-driven reforms.

Finally, a culture of ethical and responsible use of artificial intelligence must be embedded in training and practice. This requires guidelines on data privacy, bias mitigation, and transparency in decision-making. Principals should be empowered to leverage AI tools as aids to human judgment, rather than as substitutes, ensuring that educational leadership remains grounded in values of equity, inclusivity, and human development.

Together, these implications highlight that successful leadership reform in Vietnam depends on adopting global best practices and aligning them with national priorities, cultural contexts, and long-term visions for educational equity and excellence.

7. CONCLUSION AND RECOMMENDATIONS

This study underscores critical gaps in the professional development of secondary school principals in North Central Vietnam, particularly emphasizing the underdeveloped digital and artificial intelligence competencies domains. By adopting the Job Position Approach, the proposed solutions call for comprehensive reforms in recruitment, professional training, performance evaluation, and enabling policy frameworks.

The findings suggest that strengthening principals' digital leadership is not merely a technical upgrade but a paradigm shift that requires systemic coordination across multiple stakeholders. Accordingly, the following recommendations are advanced: (1) the Ministry of Education and Training should update the principal competency framework to explicitly integrate digital and artificial intelligence skills, harmonized with international benchmarks; (2) local governments must prioritize investments in digital infrastructure and connectivity, particularly in disadvantaged and rural areas, to ensure equity; (3) training institutions should design and implement sustained, practice-oriented professional development programs that focus on artificial intelligence, digital pedagogy, and data literacy; and (4) principals themselves must embrace a mindset of lifelong learning, innovation, and ethical responsibility in the use of emerging technologies.

These recommendations respond to immediate challenges and align with Vietnam’s national strategy for educational reform and digital transformation. More importantly, they contribute to advancing an inclusive and future-ready model of educational leadership that empowers principals to drive school improvement, reduce educational disparities, and prepare students for success in a rapidly evolving digital society.

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